WHAT IS CLAIMED IS:

1. An (R)-2,3-butanediol dehydrogenase, wherein

(a) the dehydrogenase produces (R)-acetoin by acting on (2R,3R)-2,3-butanediol using nicotinamide adenine dinucleotide as a coenzyme and produces (2R,3R)-2,3-butanediol by reducing 2,3-butanedione using reduced form of nicotinamide adenine dinucleotide as a coenzyme;

(b) the dehydrogenase uses nicotinamide adenine dinucleotide as a coenzyme in oxidation reaction and uses reduced form of nicotinamide adenine dinucleotide as a coenzyme in reduction reaction and preferentially oxidizes a hydroxyl group of 2,3-butanediol in (R) configuration; and

(c) the dehydrogenase has 100 U or higher of (R)-2,3-butanediol dehydrogenase activity per 1 mg of the dehydrogenase when purified.

2. The (R)-2,3-butanediol dehydrogenase of claim 1, wherein the dehydrogenase has (a) an optimal pH for glycerol oxidation reaction of 10; and (b) a molecular weight of 36,000 when determined by sodium dodecyl sulfate-polyacrylamide gel electrophoresis and 76,000 when determined by gel filtration.

3. The (R)-2,3-butanediol dehydrogenase of claim 1, wherein the dehydrogenase is produced by a microorganism belonging to the genus *Pichia*.

4. The (R)-2,3-butanediol dehydrogenase of claim 3, wherein the microorganism is *Pichia angusta*.

5. An isolated polynucleotide selected from the group consisting of:

(a) a polynucleotide comprising the nucleotide sequence of SEQ ID NO:1;

(b) a polynucleotide encoding a polypeptide comprising the amino acid sequence of SEQ ID NO:2;

(c) a polynucleotide encoding a polypeptide that comprises an amino acid sequence comprising the amino acid sequence of SEQ ID NO: 2 in which one or more amino acids are substituted, deleted, inserted, and/or added and that is functionally equivalent to a polypeptide comprising the amino acid sequence of SEQ ID NO:2; and

(d) a polynucleotide that hybridizes under stringent conditions to a polynucleotide comprising the nucleotide sequence of SEQ ID NO: 1 and that encodes a polypeptide functionally equivalent to a polypeptide comprising the amino acid sequence of SEQ ID NO:2.

6. The isolated polynucleotide of claim 5, wherein the polynucleotide comprises a nucleotide sequence having 70% or higher percent identity to the nucleotide sequence of SEQ ID NO:1.

7. The isolated polynucleotide of claim 5, wherein the polynucleotide encodes an amino acid sequence having 70% or higher percent identity to the amino acid sequence of SEQ ID NO:2.

8. A substantially purified polypeptide encoded by the polynucleotide of claim 5.

9. The polypeptide of claim 8, wherein the polypeptide comprises the amino acid sequence of SEQ ID NO:2.

10. A vector comprising the polynucleotide of claim 5.

11. A transformant comprising the polynucleotide of claim 5.

12. A transformant comprising the vector of claim 10.

13. A method for producing a polypeptide, the method comprising the steps of: culturing the transformant of claim 11 and recovering an expression product.

14. A method for producing an (R)-2,3-butanediol dehydrogenase, the method comprising: (a) culturing a microorganism that belongs to the genus *Pichia* and that produces the dehydrogenase of claim 1 and (b) isolating the dehydrogenase from the microorganism.

15. A method for producing an (R)-2,3-butanediol dehydrogenase, the method comprising: (a) culturing a microorganism that belongs to the genus *Pichia* and that produces the polypeptide of claim 8 and (b) isolating the dehydrogenase from the microorganism.

16. The method of claim 14, wherein the microorganism is *Pichia angusta*.

17. A method for producing an alcohol, the method comprising the steps of:

reacting the (R)-2,3-butanediol dehydrogenase of claim 1 or a processed product thereof to a ketone in the presence of reduced form of nicotinamide adenine dinucleotide to generate an alcohol, and

recovering the generated alcohol.

18. A method for producing an alcohol, the method comprising the steps of:

reacting the polypeptide of claim 8 or a processed product thereof to a ketone in the presence of reduced form of nicotinamide adenine dinucleotide to generate an alcohol, and

recovering the generated alcohol.

19. A method for producing an alcohol, the method comprising the steps of:

providing a microorganism producing the (R)-2,3-butanediol dehydrogenase of claim 1 or a processed product thereof;

reacting the (R)-2,3-butanediol dehydrogenase produced from the microorganism to a ketone in the presence of reduced form of nicotinamide adenine dinucleotide to generate an alcohol, and

recovering the generated alcohol.

20. The method of claim 19, wherein the microorganism is the transformant of claim 11.

21. The method of claim 17, wherein the ketone is 2,3-butanedione and the alcohol is (2R,3R)-2,3-butanediol.

22. The method of claim 18, wherein the ketone is 2,3-butanedione and the alcohol is (2R,3R)-2,3-butanediol.

23. The method of claim 19, wherein the ketone is 2,3-butanedione and the alcohol is (2R,3R)-2,3-butanediol.